

REMARKS**Introduction**

Claims 1-17 are currently pending in the application. Claims 1 and 2 stand rejected, and claims 3-17 are objected to. No amendments to the claims have been made at this time. Applicant respectfully submits that no new matter has been added. Applicant respectfully requests reconsideration of the application in view of the following remarks.

Rejection under 35 U.S.C. § 103(a)

Claims 1 and 2 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. patent application No. 2002/0,157,322 to Pedretti (Pedretti) in view of EP 0494053 to Giachi (Giachi). Applicant respectfully submits that the cited combination of Pedretti and Giachi, singularly or in combination, do not render Applicant's claims unpatentable.

Pedretti discloses a pneumatic component comprising an elongate, essentially cylindrical, hollow body manufactured from a flexible, air tight material inflated with compressed air (§ 19). The hollow member additionally includes a pressure rod located on its upper side, which is capable of transferring axial forces (§ 19). Two tension elements are also attached to the hollow member at nodes formed at the ends of the hollow member (§ 19). Pedretti does not disclose a means for altering the pressure of the hollow body. Giachi is cited as disclosing a means for altering the pressure of a hollow body.

Giachi is directed to an inflatable structure comprising a plurality of pneumatic arches (Column 3, Lines 1-3). Giachi discloses that the inflatable structure includes a means for monitoring the internal pressure of the tubular members that form the structure, a compressor to increase the internal pressure, and safety valves to lower the pressure (Column 5, Lines 43-54).

Applicant respectfully submits that the cited combination of Pedretti and Giachi does not teach or suggest at least one of the features of Applicant's invention, namely providing means for electrically altering at least one of the operating parameters: pressure in the hollow body, length

of the compression member, or length of the tractive elements. While Pedretti does disclose a hollow body having a pressure rod and two tractive elements (§ 19), Pedretti does not teach that such a device includes the ability to adjust the length of the pressure rod or the tractive elements electrically. Applicant, on the other hand, does disclose that the length of the compression member may be adjusted electrically via electroactive ceramics, and that the tractive elements may be adjusted in length electrically via electroactive polymers (Page 6, last ¶). By adjusting the lengths of the compression member and the tractive elements, Applicant's design allows for the tensile forces acting on the hollow member to be monitored and adjusted. Monitoring and adjusting the tensile forces acting on the hollow member allows for the damping of vibrations present in the hollow member.

Pedretti does not disclose a system for monitoring and changing the pressure of the hollow body. Giachi discloses a system that utilizes a compressor and safety valves to adjust the pressure within the hollow member (Column 5, Lines 43-54). Giachi, however, does not disclose that the pressure can be adjusted electrically. Applicant discloses using a heat pump within the hollow body that is capable of heating a liquid to its gas phase, and cooling the gas to its liquid phase (Page 4). By controlling the liquid/gas transition of the fluid, the internal pressure of the hollow body may be adjusted as desired. Giachi does not teach using a heat pump to control the pressure of a hollow member.

Applicant respectfully submits that, at least for the reasons set forth above, independent claim 1 distinguishes over the cited combination of Pedretti and Giachi. As such, withdrawal of the rejection of independent claim 1 as obvious over the cited combination of Pedretti and Giachi is respectfully requested.

Dependent claims 2-17 depend from and further limit independent claim 1 in a patentable sense. Applicant respectfully submits that these claims are therefore deemed to now distinguish over the cited combination of Fischer and Clapper for at least the same reasons as those set forth above relative the rejection of independent claim 1. Withdrawal of the rejection of dependent claims 2-17 as obvious over the combination of Pedretti and Giachi is respectfully requested.

In view of the above amendment, Applicant respectfully submits that the present application is in condition for allowance. A Notice to that effect is respectfully requested.

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Respectfully submitted,

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